IN THE SPECIFICATION

On page 3, just prior to, "DETAILED DESCRIPTION OF THE INVENTION," please insert the following paragraphs:

Figure 4 is a perspective view of an exemplary three-dimensional solid that may be used to generate a single equivalent profile curve.

Figure 5 is a detailed view of a portion of the exemplary three-dimensional solid shown in Figure 4.

Figure 6 is a view of a single equivalent profile curve of the exemplary three dimensional object shown in Figure 4.

Figure 7 is a view of a resolved cross-sectional profile of the three-dimensional solid shown in Figure 4.

On page 6, line 26 just prior to the paragraph that begins with, "The above-described algorithm...," please insert the following paragraphs:

Figure 4 is a perspective view of an exemplary three-dimensional solid 500 that may be used for generating a single equivalent profile curve. Three-dimensional solid 500 is introduced to algorithm 82 in an electronic format that is compatible with computer aided design (CAD) type programs. The electronic format may be input into server system 12 and stored on mass storage device 18 from an input device coupled to client system 14 and/or server system 12. In the exemplary embodiment, three-dimensional solid 500 has cyclic symmetry about an axis of rotation 502, about which three-dimensional solid 500 is primarily revolved. In the exemplary embodiment, three-dimensional model 500 includes a plurality of features 504 that are not continuously swept through three hundred sixty degrees.

Figure 5 is a detailed view of a portion 520 of the exemplary three-dimensional solid shown in Figure 4. Profile curve generator system 10 queries three-dimensional solid 500 to identify a plurality of faces 522, 524, and 524, for example, on three-dimensional solid 500. The query of three-dimensional solid 500 begins after a revolved face is identified as a seed face 526. The query process continues until all the faces have been queried and processing returns to seed face 526. A loop-wise sequence of processing ensures that a contiguous path

of profile curves is created and identifies a circular edge that is a revolved edge 528. A circular edge that is aligned with respect to three-dimensional solid axis of rotation 502 is considered a revolved edge. Such edges border faces and the three-dimensional solid may include any or all of five different revolved faces including: toroidal, conical, planar, cylindrical, or revolved-spline. Profile curve generator system 10 determines if such a circular edge was identified when the loop-wise sequence was executed. Such a circular edge is known as a seed revolved edge 530 and is disposed on seed face 526.

Figure 6 is a graph illustrating an exemplary single equivalent profile curve 602 of the three dimensional solid shown in Figure 4. For example, subroutine 400 may create an equivalent face curve between points (R1, Z1) and (R2, Z2) and determine which of the five types of faces, toroidal, conical, planar, cylindrical, or revolved-spline, is defined between points (R1, Z1) and (R2, Z2). If a face is determined to be toroidal, single equivalent profile curve 602 will be an arc extending through points (R1, Z1) and (R2, Z2) and including a torus minor radius. If the face is not determined to be toroidal, subroutine 400 is executed to determine if the face is conical, cylindrical, or planar. If the face is conical, cylindrical, or planar, a line extending through points (R1, Z1) and (R2, Z2) and having a slope substantially equal to a slope of the specific face being profiled is created.

If the face is not determined to be conical, cylindrical, or planar, subroutine 400 is executed to determine if the face is a spline revolution. If the face is a spline revolution, algorithm 82 extracts the resolved spline, and transforms the resolved spine to a two-dimensional plane. The resolved two-dimensional spline is then trimmed to extend between points (R1, Z1) and (R2, Z2).

Figure 7 is a view of a resolved cross-sectional profile 700 of three-dimensional solid 500 shown in (Figure 4). Resolved cross-section 700 is generated by algorithm 82 by adding the equivalent face curves to a string of profile curves previously generated. The string of curves are bounding and define the revolved profile.

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